




Pharmaceutical Bioengineering at UW

Continuing Education Programs
for the Biotech Professional

*Programs approved by
UW Department of Bioengineering*

*Programs administered by
UW Continuing and Professional Education*





Certificate Programs/Degree Program **Pharmaceutical Bioengineering**

UW Continuing and Professional Education

www.extension.washington.edu

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Agenda

- Welcome and Introductions
- Life Sciences and the UW
- Certificate in Basic Biosciences
- Master of Pharmaceutical Bioengineering
- Q&A

Dr. Pat Stayton

Professor Program Director



Current Research

Our research group is interested in elucidating the fundamental mechanisms of biomolecular recognition and applying the unique capabilities of biological molecules to biotechnologies. We would like to bridge the gap between understanding molecular structure-function relationships, and to be able to utilize proteins/peptides/DNA for in vivo drug therapies, bioseparations, diagnostics, and biomaterial development.



Basic Bioscience

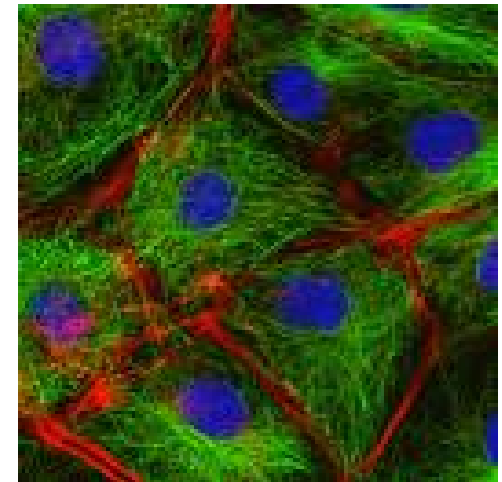
A credit certificate program

Explore advanced post-baccalaureate education in the following areas: pharmaceuticals, molecular bioengineering, molecular biology, drug discovery and design, regulatory affairs, experimental design, statistics, controlled release and drug delivery, biometrics, biochemistry, molecular genetics, systems biology, drug discovery and translational pharmaceutical bioengineering science.

Core Track: Basic Bioscience

20 credits total

- **Course 1: Molecular and Cellular Biology I**
4 Credits, Offered Winter 2010
- **Course 2: Molecular and Cellular Biology II**
4 Credits, Offered Spring 2010
- **Course 3: General Pharmaceutics I**
4 Credits, Offered Fall 2010
- **Course 4: General Pharmaceutics II**
4 Credits, Offered Winter 2011
- **Course 5: Statistics and Experimental Design**
4 Credits, Offered Spring 2011



Professional Audience

- **Professional development opportunities while still working full time**

- **Taking on new roles and/or responsibilities:**
 - (1) How to have different types of scientists, researchers and other biotech professionals find a common “language” across the company to work effectively
 - (2) How can functional groups perform better, e.g. how can R&D folks more effectively work with process development teams to streamline drug discovery, development, manufacture
 - (3) Providing value to your employer

Basic Biosciences Schedule*



	Tuesdays	Thursdays
Autumn, Winter, Spring	Online	UWEO Downtown

*Individual course schedules are subject to change

Online "Live" Meetings



http://uweoconnect.extn.washington.edu - Biosensors Orientation_2 - Microsoft Internet Explorer

Attendee List (5)

- Shannon Kuyper
- Emma
- Kyra
- Shai Harmelin
- Tina Vesper

BB Orientation 07.ppt

UNIVERSITY OF WASHINGTON

Welcome to the 2007-2008 program!
Program administered through UWEO

Medical Engineering
** Certificate Program for Continuing Education **
** Professional Evening Degree Program **

Orientation Session
Biosensors & Biomaterials Certificate Program

Shannon at Desk: final.jpg

Chat

Emma: Hi Shannon - I'll dial in in a few
Shai Harmelin: Hi All
Shannon Kuyper: hello shai
Emma: Hi Shai
Shannon Kuyper: hi, kyra! kirk is with us, too!
Shai Harmelin: Ni microphone around. I'll be chatting with my fingers
Shannon Kuyper: shai -- can you call in also? then chat is optional
Shannon Kuyper: we are going to get started now -- please let us know if you can't hear after i turn on the microphone in 30 seconds
Shai Harmelin: Hi All, I'll stay with this chat

Camera and Voice

Shannon Kuyper

PAUSED... 0:00:14

Done Internet

Start Recording Informa... adobe connect scr... http://uweocon... Inbox - Microsoft ... OL Instructor Pgm ... 100% 4:14 PM



Adobe

Applying to the Certificate



Admission Requirements

- Bachelor's Degree in a Science, Clinical or Engineering field. Degree's in other fields considered
 - Prior college credit course work in chemistry, physics, biology and calculus recommended
 - Applicants to the program with education or professional experience in health sciences, business, law, or health sciences are considered for admission.
-



Online Application

- The completed [application form](#).
- Résumé
- 250 Letter of application stating your reasons for wanting to take the certificate program, noting any relevant experience and other qualifications.

Rolling Application

Next Program Starts January 5, 2010!



GNM Deadline

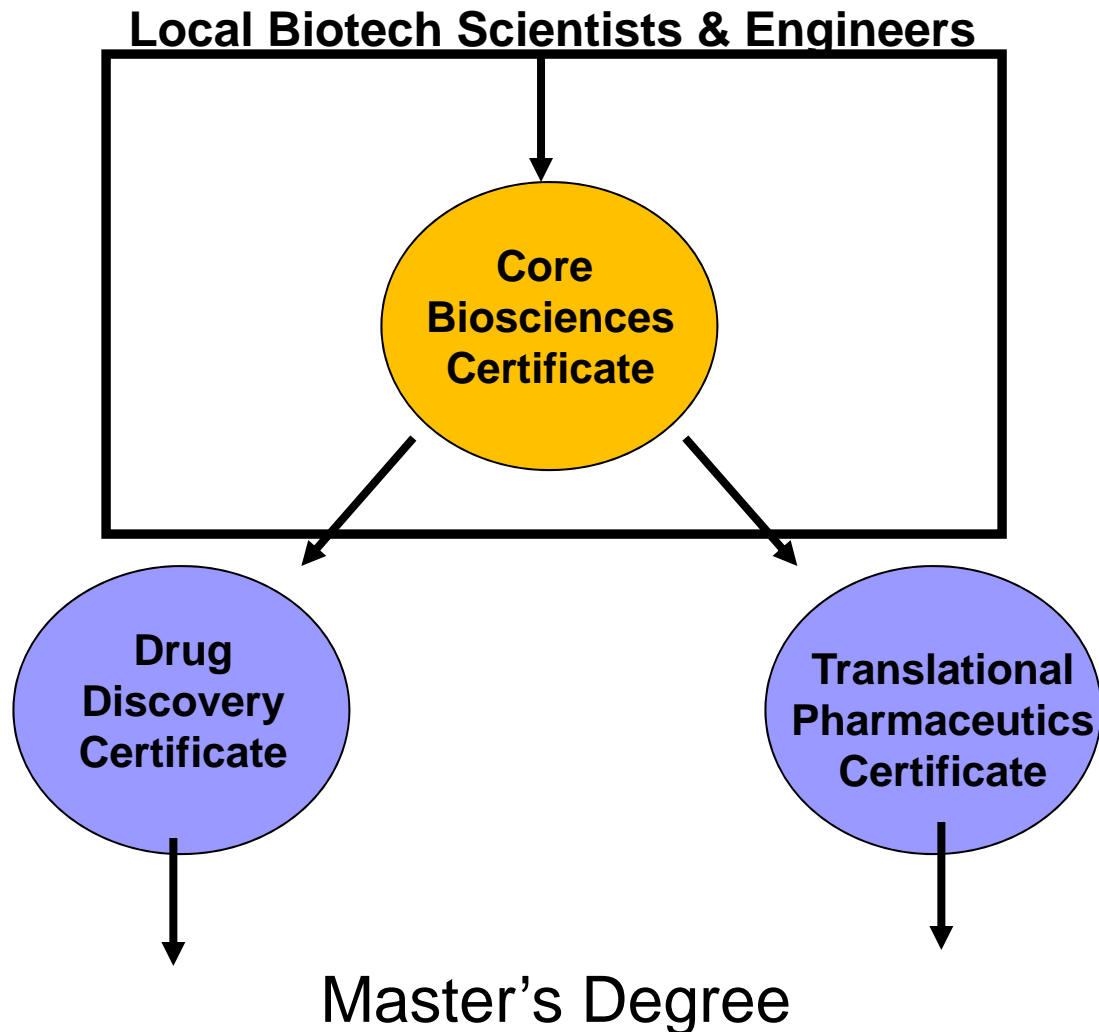
- Applicants considering applying course graduate credits to a future UW degree should apply for Graduate Non-Matriculated Status with the UW Graduate School by December 1, 2009.



Pharmaceutical Bioengineering

Path to a degree

Pharmaceutical Bioengineering Certificates and Master's Degree Programs



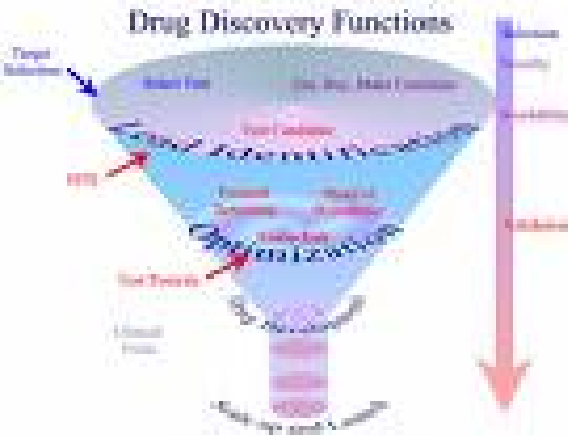
Drug Discovery & Design Track

- **Molecular Biotechnology**
4 credits

- **Drug Discovery and Design**
4 credits

- **Molecular Targets and Drug Classes**
4 credits

- **Systems Biology and Bioinformatics**
4 credits



Translational Pharmaceuticals Track

Preclinical Development

4 credits

Clinical Development

4 credits

Formulation and Delivery

4 credits

Process Development

4 credits



The Degree at a Glance

Master of Pharmaceutical Bioengineering Evening Degree Program

40 credits total

- Basic Bioscience 20 Credits
- One specialized track 16 Credits
- Participation in Departmental Seminars 4 Credits

56 credits total

- o Basic Bioscience 20 Credits
- o One specialized track 16 Credits
- o Second specialized track 16 Credits
- o Participation in Departmental Seminars 4 Credits

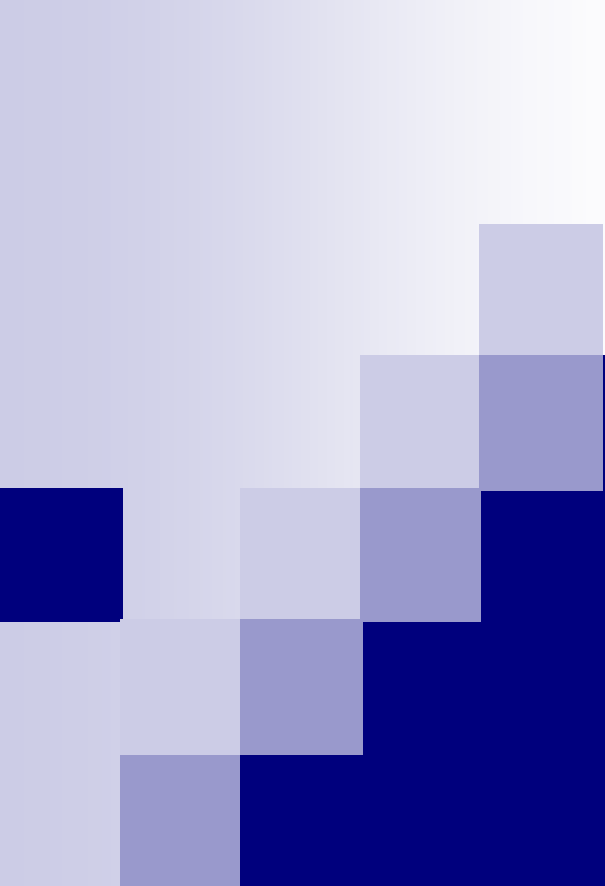
Note: Credit load varies according to path and interests.

Many options for a program approach

- Certificate Program
 - Each certificate can be considered a stand alone program
 - 3 total certificates
 - Can take 1, 2, or all 3 certificates

- Degree Program
 - Option to pursue Master's via a Roll-up from Basic Bioscience Certificate
 - **Students should apply for GNM status** before beginning Basic Biosciences Certificate to apply credits toward degree
 - Degree Applicants are Reviewed and Accepted in Autumn Quarter Annually

- Single Course Options for Program Courses



Pharmaceutical Bioengineering

Application Procedures

Degree Admission Requirements

Education & Experience

- B.S. degree or equivalent in a relevant science (in the field/research) , public health (biomedical related) or engineering in the field or research related, or have a B.S. degree or equivalent in unrelated field (ex. Business) and 2 years experience working within a scientific or engineering group for a biotechnology or pharmaceutical company or related industry. Clinical degrees are considered.
- Applicants who have a bachelor's degree other than a B.S. (ex. B.A. degrees), professional experience and completed recommended prerequisite course work will also be considered for admission.
- GPA and GNM Requirements
 - GNM Status: Approved by end of Nov. Must get 3.0 for 1st two courses of the quarter
 - BA/BS +pre-reqs + 3.0 = GNM status
 - BA/BS, Under 3.0, has 2 years work experience may be approved for GNM status and will need to receive a 3.0 or above in their GNM courses to be eligible for degree admissions.

Degree Admission Requirements

Prerequisite Coursework

- Calculus - Minimum of 1 quarter (or 1 semester) of college calculus.
- Chemistry: Minimum of 2 quarters (1 semester) college general chemistry.
Additional course in organic chemistry recommended.
- Biology: Minimum of 1 quarter (Semester) of general biology.
- Physics: 1 Quarter (Physics 114).

Application: Degree



ONLINE
APPLICATION

- Graduate School Application
- Résumé
- Letter of Intent
- 2 Letters of Recommendation
- GRE
- Official College Transcripts

Single Degree Application Deadline in October Annually



Remember

GNM – Your Credit Pathway from Certificate to Degree Credit!

- GNM = Graduate Non Matriculated
- A way to tell the Graduate School you intend to pursue a degree later
- “Bank” credit
- Application to GNM office. Select applying to “Master of Medical Engineering” for the interim.
- Official undergraduate transcripts
- Quarterly deadlines for application
- No application fee

<http://www.grad.washington.edu/admissions/gnm.pdf>



Thank you!

Paul Detmer, Ph.D.
Eric Irvin
Dorian Taylor